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Carlos Melia Christensen

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EXAMINER

YANG, CLARA I

ART UNIT

2635

PAPER NUMBER

8

DATE MAILED: 11/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/841,050

Applicant(s)

CHRISTENSEN ET AL.

Examiner

Clara Yang

Art Unit

2635

— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 April 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☒ Claim(s) 10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5,6,7.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Specification*

1. The abstract of the disclosure is objected to because of undue length (i.e., 150-word maximum has been exceeded). Correction is required. See MPEP § 608.01(b).

### *Claim Objections*

2. Claim 10 is objected to because of the following informalities: "wherein the sensor measures the impedance of an electric signal, such as the capacitance, such as the resistance, such as the inductance" is not in proper idiomatic English. Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding claim 10, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d). Here it is understood that claim 10 requires the sensor to measure the impedance, capacitance, resistance, or inductance of an electrical signal.

### *Claim Rejections - 35 USC § 102*

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

Art Unit: 2635

applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1 - 7, 9 - 11, and 15 - 21 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,275,166 (del Castillo et al.).

Referring to Claims 1, 2, 15, and 16, del Castillo's radio frequency (RF) appliance control and monitoring system comprises a plurality of appliance management stations (AMS) 12 (i.e., "devices to be controlled") and a headend control station (HCS) 14 (i.e., "first controller") as shown in Fig. 2. Per del Castillo, each AMS 12, as shown in Figs. 1 and 3, includes: (a) RF transceiver (XCVR) 22 that functions as a transmitter for transmitting return signals and a receiver for receiving command signals (see Col. 4, lines 52 - 54; Col. 7, lines 31 - 67; and Col. 8, lines 1 - 18); (b) central processing unit (CPU) 34 that is connected to transceiver 22 (see Col. 5, lines 13 - 15); (c) integrated circuit (IC) 35 for non-volatile storage of AMS 12's unique serial number (see Col. 5, lines 15 - 17); and (d) 6-bit buffer 43 and infrared (IR) transceiver 42/RJ-45 connector for providing an output to an appliance connected to the device (see Col. 2, lines 39 - 43; Col. 4, lines 52 - 54 and 59 - 61; and Col. 6, lines 16 - 19 and 62 - 66). HCS 14, as shown in Fig. 1 by del Castillo, comprises: (e) headend transceiver unit (HTU) 18 for transmitting command signals and a receiver for receiving return signals (see Col. 4, lines 10 - 11 and 26 - 34; Col. 7, lines 31 - 67; and Col. 8, lines 1 - 18); (f) a memory containing a database (i.e., "an organized data structure") of each AMS 12's unique serial number (see Col. 4, lines 15 - 20; Col. 8, lines 37 - 42 and 52 - 67; and Col. 9, lines 1 - 8); and (g) a headend control computer (HCC) 16, which has an Intel Pentium® P2 processor, for controlling HTU 18, storing one or more AMS 12's unique serial numbers in a memory device, and generating a first signal that includes one

Art Unit: 2635

or more relay addresses (if necessary), a destination addresses corresponding to an AMS 12, and a command related to the operation of the appliances connected to AMS 12 (see Fig. 4, relay addresses RA 64, destination address DA 63, and device commands DC 67; Col. 4, lines 7 - 11 and 15 - 18; and Col. 7, lines 40 - 47 and 56 - 65) . Because del Castillo discloses that in response to receiving HCS 14's command signal, AMS 12 transmits a return signal (see Fig. 5) containing a destination address 73, which is understood to be HCS 14's unique serial number, and one or more relay addresses 74 (if necessary), it is inherent that HCS 14 has (h) a second memory for holding its unique serial number/address. As illustrated in Figs. 2 and 3, each of del Castillo's AMS 12 includes a universal relay unit (URU) 20 and is further adapted to act as relays or signal repeating device (see Col. 4, lines 52 - 54; Col. 6, lines 62 - 67; and Col. 7, lines 1 - 13). According to del Castillo and as shown in Fig. 6, control system 10 provides a process for controlling a distributed array of appliances connected to an AMS 12 by the steps of (1) headend computer H generating and transmitting a signal containing addresses R1 and R2 of a first relay 20' and second relay 20 respectively, the destination address D of URU 20 that is connected to the appliances to be controlled, and a control signal C for an appliance; (2) first relay 20' receiving the signal, decoding the first relay address R1, and transmitting the second relay address R2, destination address D, and control signal C; (3) second relay 20 receiving the signal, decoding the second relay address R1, and transmitting the destination address D and control signal C; and (4) the destination URU 20 receiving the signal, decoding the destination address D, and feeding the control signal C to the appliance A (see Col. 7, lines 31 - 67; and Col. 8, lines 1 - 18).

Regarding Claims 3, 6, 7, and 17, per del Castillo, Fig. 5 is an exemplary return signal protocol. As shown in Fig. 5, the destination AMS 12's return signal contains address section

72, which contains one or more relay addresses 74 (if necessary) and a destination address 73 of HCS 14, and feedback section 76, which includes one or more feedback elements 77 related to particular appliance devices 24 at the destination AMS 12 (see Col. 7, lines 48 - 55). Here it is understood that feedback elements 77 are provided from each appliance to the connected AMS 12 via IR transceiver 42/RJ-45 connector and 6-bit buffer 43 (see Fig. 3).

Regarding Claims 4 and 18, del Castillo's HCS 14 is able to (a) build a routing table indicating, for each AMS 12, other AMS 12 that can receive and process a signal transmitted by an AMS 12 and (b) store the routing table in a first memory (see Col. 8, lines 53 - 67 and Col. 9, lines 1 - 15).

Regarding Claims 5 and 19, del Castillo imparts that by using a routing table, HCS 14's processor is able to identify the addresses/unique serial number of AMS 12 for repeating a first signal having a predetermine destination address, and to include the addresses of AMS 12 that will function as relays (see Fig. 4, relay addresses RA and destination address DA; and Col. 8, lines 45 - 52).

Regarding Claim 9, del Castillo teaches that AMS 12 is able to interface and control appliances such as temperature sensors 26, motion sensors 27, and door transducers 29 (see Figs. 1 and 3 and Col.4, lines 54 - 61).

Regarding Claim 10, del Castillo's temperature sensor 26 is a thermistor (see Col. 5, lines 58 - 60). A thermistor is an electron device that makes use of the change of resistance of a semiconductor with the change in temperature (see *The Authoritative Dictionary of IEEE Standards Terms*, 7<sup>th</sup> edition).

Regarding Claim 11, referring to Fig. 6, del Castillo's destination AMS 12 receives the first signal generated and transmitted by headend computer H, decodes the destination

address, and feeds the control signal C to the selected appliance (see Col. 8, lines 2 - 4). Referring to Fig. 4, which is an example of the first signal generated and transmitted by HCS 14, the first signal contains command section 66, which includes one or more device commands 67. Per del Castillo, device commands 67 are directed to particular appliance devices 24 at the destination AMS 12 and are understood to affect the operation of appliance devices 24 (see Col. 7, lines 40 - 47).

Regarding Claims 20 and 21, del Castillo's method for controlling a distributed array of appliances from a headend computer includes the steps of: (a) the destination AMS 12 receiving and decoding the destination address contained in the first signal; (b) the destination AMS 12 feeding an output to the appliance; (c) the destination AMS 12 transmitting the first and second relay addresses, the destination address of the headend computer, and an acknowledgment signal; (d) the first relay AMS 12 receiving the signal, decoding the first relay address, and transmitting the second relay address, the destination address of the headend computer, and an acknowledgment signal; (e) the second relay AMS 12 receiving the signal, decoding the second relay address, and transmitting the destination address of the headend computer and an acknowledgment signal; and (f) the headend computer receiving the signal, decoding the destination address, and receiving the acknowledgment signal (see Fig. 6; Col. 3, lines 27 - 42 and Col. 8, lines 2 - 11).

#### *Claim Rejections - 35 USC § 103*

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,275,166 (del Castillo et al.).

Regarding Claim 8, CPU 34 of del Castillo's AMS 12 receives an appliance's input via IR transceiver 42/RJ-45 connector and 6-bit buffer 43. del Castillo is silent on storing an appliance's input in IC 35, which is a non-volatile memory for storing AMS 12's unique serial number (see Col. 5, lines 15 -17). However, the Examiner takes Official Notice that storing received data in memory is well known in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify del Castillo's CPU 43 such that it stores appliance input in IC 35 since the Examiner takes Official Notice that storing received data in memory is well known in the art and maintains a history of the connected appliances' activities, thereby facilitating troubleshooting.

10. Claims 12 - 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,275,166 (del Castillo et al.) as applied to claim 1 above, and further in view of U.S. Patent No. 5,544,036 (Brown, Jr. et al.).



Regarding Claim 12, Del Castillo's AMS 12, though able to turn appliances on and off, is unable to output and adjust power at a level according to a setting contained in the received signal.

In an analogous art, Brown, Jr.'s energy management and home automation system 10 comprises a central portion 18 or first controller and a plurality of controllers 14, each controller 14 providing electrical control signals to various electrical consuming devices 16 (see Fig.1 and Col. 3, lines 4 - 13 and 27 - 34). Per Brown, Jr., controller 14 is either a heating, ventilation, and air conditioning (HVAC) control unit 26 or a water heater and automation control unit 28, and house 12 has one or more of either type of control unit 26 or 28 (see Figs. 1 and 2; Col. 4, lines 61 - 67; and Col. 5, lines 1 - 8). Control unit 26/28 or device to be controlled, as shown in Fig. 2, comprises: (a) pager receiver 32/46 or RF receiver; (b) controller 30/44; and (c) HVAC controller 34/relay and driver 50 or means for providing output to connected appliances (see Col. 5, lines 34 - 67). Referring to Figs. 3A and 3B, which are block diagrams of control unit 28 and 26's controllers 44 and 30 respectively, controller 44/30 comprises (d) microprocessor 58 and (e) conventional RAM memory 60 for storing control unit 28's 8-digit individual recognition code (see Col. 21, lines 56 - 66). Central portion 18, as shown in Fig. 1, comprises (f) transmitter 20, (g) utility command center computer 24 or processor, and (h) customer command center computer 22 or processor. Because a utility company is able to send messages that include a code indicating that the message is addressed to a specific controller (see Col. 1, lines 60 - 67), it is inherent that utility command center computer 24 has a memory for storing addresses. Brown, Jr. discloses that a utility company is able to provide messages to controller 14 via utility command center computer 24 and transmitter 20 and that these transmitted messages may cause controller 14 to turn off certain appliances, such as heating and cooling units 38, for

Art Unit: 2635

selected times to reduce energy consumption (see Col. 4, lines 7 – 19). Because control unit 26's HVAC controller 34 provides output voltages or electric power to control the fan, heating, and cooling units of conventional heating and cooling units 38 (see Col. 5, lines 42 – 45), it is understood that control unit 26 adjusts the output power level from the normal operating level to 0 volts when a message received from central portion 18 instructs control unit 26 to turn off heating and cooling units 38.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify del Castillo's AMS 12 as taught by Brown, Jr. because an AMS 12 that is able to control power level an appliance as specified in a received signal enables utility companies to reduce demand for electricity during critical events (such as equipment failure) by eliminating or reducing the demand of selected high energy consuming appliances (such as heating and air conditioning units or water heaters) while allowing more necessary appliances (such as lights, small appliances, etc.) to still operate, thus reducing inconvenience to customers (see Brown, Jr., Col. 1, lines 31 – 48).

Regarding Claims 13 and 14, del Castillo is silent on AMS 12 receiving a first signal that causes AMS 12 to become unresponsive to subsequent command signals until AMS 12 receives a second signal that removes the restriction.

Brown, Jr.'s controller 14 comprises computer programs that recognize a utility company's energy reduction commands (or first signal) and prevent a user from overriding the utility company's commands unless the utility company sends another paging message (or second signal) authorizing energy consumption (see Col. 4, lines 26 – 34). Brown, Jr. also imparts that a user is able to send messages or commands to controller 14 via customer commands center computer 22 via transmitter 20. This communication normally occurs when a

user calls customer center computer 22. In order to initiate transmission of a message, the user must first enter his or her telephone number and a personal identification number (see Col. 26, lines 5 - 28). Though Brown, Jr. omits teaching that an employee of a utility company must enter a code in order to generate and send energy reduction commands, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Brown, Jr.'s method such that it further requires utility company personnel to enter a security code prior to generating and transmitting commands because entering a security code at utility command center computer 24 prior to generating commands ensures that only authorized employees are able to control customers' controllers 14.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify del Castillo's AMS 12 as taught by Brown, Jr. because a utility company's energy management abilities are greatly improved when an AMS 12 is able to recognize the utility company's energy reduction commands (or first signal) and become unresponsive to subsequent user commands until AMS 12 receives a second signal that removes the restriction. In addition, by requiring that a security code be entered prior to generating energy reduction commands, only authorized employees are able to control customers' controllers 14, thereby improving security.

#### *Conclusion*

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- ♦ U.S. Patent No. 5,101,191 (MacFadyen et al.): MacFadyen's automated system comprises a plurality of network interfaces 23, each connected via outlets 17 to a plurality of appliances 11. MacFadyen imparts that network communication controller 61 controls appliance controller 75, which in turn controls the power flow through the power blocks, and that when an appliance requests energy, the

Art Unit: 2635

appliance specifies a minimum and maximum rate of flow (or level) for electric current.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Clara Yang whose telephone number is (703) 305-4086. The examiner can normally be reached on 8:30 AM - 7:00 PM, Monday - Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Horabik can be reached on (703) 305-4704. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

CY  
5 November 2003

  
BRIAN ZIMMERMAN  
PRIMARY EXAMINER